INFORMATION PAPER

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SUBJECT: Information Economics

1. Purpose. To provide an overview on information economics.

2. Facts. a. For nearly three decades, despite massive investments in information technology, the service sector, overall, has showed only miniscule gains in measured productivity. The executive agencies of the Federal government spent approximately $26 billion on information technology (IT) in FY96 and FY97-- most, if not all, of these expenditures (i.e., IT investments) cannot be quantitatively measured against agency mission and/or program performance.

b. With passage of the Information Technology Reform Act (ITMRA) of 1996, later renamed the Clinger-Cohen Act, agencies are required to implement changes in the way they acquire and manage information technology that differs from the traditional approaches currently being practiced. Fundamental to the changes required ITMRA, as well as the Paperwork Reduction Act of 1995 and the Government Performance and Results of Act of 1993, is the creation of an IT Investment Portfolio and adoption and use of information economics within an IT Investment Decision Process. GAO/OMB's *"A Practical Guide, Evaluating Information Technology Investments,"* dated November 1995, furnishes information on the **Selection** phase of the IT investment decision process and how information economics criteria is used to score and rank IT and/or automated information system (AIS) projects. An update the this initial guide is GAO's *"Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making,* dated February 1997.

c. Simply stated, information economics is a methodology for assessing the tangible and intangible benefits, costs, and risks of proposed investments in information technology and linking these IT investments to business performance. The use of information economics creates a two-part decision-- one based on business value through performance and the other on technology cost. The use of information economics criteria (i.e., values and risks) in an agency's IT Investment Decision Process separates the business justification for information technology from the technological viability of the proposed use of information technology.

d. Information economics expands the traditional cost to benefits comparison, which is too narrow to adequately answer management's question, "What is our IT investment really worth?" Information economics expands the concept of *benefit* to a larger concept of *value,* and the concept of *cost* to include ways in which information technology can negatively affect an organization. *Value,* which is the basis for deciding whether or not it is worth investing in information technology, is assessed by adding business performance factors (positive rating value times weight) together. *Cost* is assessed by adding business risk factors (negative rating value times weight) together. *Value* and *Cost* taken together provide the true economic impact of

information technology upon an organization. Information economics in an IT Investment Decision Process forces management to shift its focus away from the information technology to the effects that information technology has on the business (mission and/or program performance) itself. This, out of necessity, compels management to link its information technology planning and its strategic business planning together.

e. An agency would use information economics assessment to compare its IT or AIS proposed projects to one another and to select only those projects that best support the goals and objectives of the organization in improving its mission/program performance and service delivery. In an era of continued decreases to budgets and manpower, coupled with public policy demands for accountability in the use of taxpayer dollars, the use of information economics is critical to ensure an agency can defend its IT investment decisions; but, more importantly, utilization of information economics is part of an organization's "good management practices."

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